

Chapter 4

Waste Prevention and Reduction

The introduction to this chapter explains the terms and definitions used to describe State and local waste prevention policies. Extensive examples are given to illustrate the evolution of policies and practices aimed at reducing both the volume and toxicity of wastes. The rest of the chapter describes current waste prevention practices in Clark County and more opportunities to use waste prevention as a solid waste management strategy.

Introduction

Waste prevention is a strategy that involves altering the design, manufacture, purchase, use or reuse of products and materials to reduce their volume or toxicity before they enter the solid waste stream. Waste prevention reduces waste at its source, thus eliminating the need for recycling, composting and disposal. The best approach to solid waste management is to eliminate waste in the first place. Waste prevention (waste reduction) reduces the need to develop, finance and maintain collection, transfer, processing and/or disposal systems. These benefits make waste prevention the highest priority for management of solid waste in Clark County and Washington State.

Waste prevention is sometimes referred to as “source reduction,” because it reduces or eliminates waste or pollution at the source. All waste generators have at least some opportunities to use waste prevention measures that reduce the generation of waste materials. Donating an unwanted computer to a charity is an example of waste prevention. So is photocopying on both sides of a sheet of paper. Altering material specifications so that fewer hazardous elements are used to make a product is another form of waste prevention.

Product engineers, manufacturers and consumers can all make an impact on waste prevention. Packaging and product engineers can design items that use materials more efficiently or are more durable. Consumers can choose to purchase items with minimal packaging and to reuse certain items before disposing or recycling them. They can select alternative low toxicity or “green” household products in place of hazardous household products. When purchasing hazardous household products, consumers can choose to purchase smaller amounts. These can be used up as directed or given to someone else who can use them, rather than disposing of them at the household hazardous waste facilities.

Preventing the generation and disposal of waste involves increasing product life; decreasing the amount of material used to make the product and/or its packaging; reducing the toxic ingredients in the product; reducing product use and consumption; and increasing the on-site management of some materials, such as organic wastes. Examples include such innovations as NCR paper, which nearly eliminated carbon paper from the waste stream, and CitroSolv and similar products, which are citrus-based cleaners, instead of contaminating toxic solvents.

County and municipal waste prevention programs that combine local economic incentives, regulations, restrictions or bans and education programs to inform and motivate, can persuade manufacturers to reduce toxic ingredients and persuade consumers to reduce consumption. These program elements also tend to have a positive effect on the on-site management of waste and toxic elements.

Market forces often have the greatest influence on product life and packaging. When consumers change their buying habits, this can drive markets and influence how the commercial and industrial sector produces, ships and sells its goods. For example, consumers can tell manufacturers in writing, by phone or via the Internet when they are happy or displeased with a product or a particular type of packaging. If enough consumers stop buying a product because of its package, manufacturers are likely to notice and institute changes. When an electronics manufacturer makes it a practice to disassemble televisions that have been returned, then reuses or recycles the parts, that manufacturer may see an increase in sales by being environmentally responsible. Product design for disassembly and reuse has already become the standard in many European countries.

Definitions

RCW 70.95 and Ecology define waste reduction as “reducing the amount or toxicity of waste generated or reusing materials.”

Although the state of Washington still uses the term “waste reduction,” the term “waste prevention” is becoming a more universally recognized phrase and is consistent regionally and nationally. The term “waste prevention” has become the standard term used by EPA, the Portland, Oregon area governments and various agencies and entities in the Seattle-King County area. Because of its wide use and acceptance, the term “waste prevention,” which includes the concepts of waste prevention, reduction and reuse has replaced “waste reduction.”

According to RCW 70.95, the priorities in managing solid waste “are necessary and should be followed in descending order as applicable.” These priorities, in descending order, are:

- Waste reduction (prevention);
- Recycling, with source separation of recyclable materials as the preferred method;
- Energy recovery, incineration or landfilling of separated waste;
- Energy recovery, incineration or landfilling of mixed wastes.

Waste Prevention Goals

The 1994 Clark County Solid Waste Management Plan established four waste prevention goals:

- The County and cities will obtain baseline measurements of residential and non-residential waste generation, and residential and non-residential waste prevention attitudes and behaviors in 1992;

- Per capita generation of residential waste in 1995 will not exceed per capita generation of residential waste in 1992, and will decrease 1 percent per year after 1995;
- Per employee generation of non-residential waste in 1995 will not exceed per employee generation of non-residential waste in 1992, and will decrease 1 percent per year after 1995;
- Awareness of waste prevention and participation in waste prevention activities will increase among Clark County residents, businesses and institutions.

Despite waste prevention education efforts, the per capita residential waste generation reduction goal stated previously was not achieved. The residential waste generation rate (residential garbage plus recycling) has increased from 2.10 pounds per person per day in 1992 to 2.62 pounds per person per day in 2000. Although the 2.62 pounds in 2000 included a larger share of recycled material than in 1992, residents are still generating more waste overall. As discussed in the Waste Monitoring and Performance Measurement Chapter, the State and the County are actively working to improve how data is collected. As a result, it may be too early to draw conclusions from this data. Recycling, despite its positive image, still has economic and environmental costs.

In general, waste prevention goals have been difficult to measure. Many cities and towns have attempted to develop methods to analyze waste prevention. The amount of garbage and recyclable material set out for pick up may be measured and tracked, but this method does not account for materials that are discarded or recycled by other means, such as self-haul. Additional problems lie in measuring waste that is no longer produced due to educational efforts as opposed to economic factors. Population growth, retail sales and per capita income are factors that influence waste generation, regardless of waste prevention education. In general, the margin for error of any method used to measure waste prevention is greater than the total amount of any waste prevention target.

Success may be measured by conducting surveys to evaluate changes in behavior and conducting waste stream analyses to track reductions in toxicity. Please note that waste prevention requires individuals, businesses and governments to change purchasing and use habits - basic changes in the way people live their lives. It requires repeated waste prevention messages to create such changes in what people buy and use. Small changes may occur, but it will take perhaps 20 years or more to see a significant and measurable change.

Additional discussion of the 1994 waste prevention goals and measurement is contained in the Measurement Chapter.

Existing Conditions

A number of waste prevention activities are occurring in Clark County. These activities can be discussed in two categories: residential and commercial/institutional. Although many waste prevention activities apply to both the residential and commercial/institutional sector, in general, in-home waste prevention behaviors are more difficult to instill, because individual preferences, personal convenience and income levels affect behavior more at home than at work.

Residential Waste Prevention

Clark County implemented its first residential waste prevention promotion and education campaign in 1991-1992, with the financial and technical support of the Department of Ecology (Ecology). A key part of the program was the distribution of reusable canvas shopping bags to encourage reduced use of plastic and paper bags.

Ecology has continued to provide local governments, including Clark County, with grants to help promote waste prevention and recycling. These grants require local matching funds. The current grant program is referred to as the "Coordinated Prevention Grant Program." Other educational materials, such as "Stop Junk Mail" postcards, waste prevention videos, waste prevention and recycling brochures, portable displays, books and home composting bins were offered to local programs free, on a one-time basis, through Ecology's now defunct WRRPIE (Waste Reduction and Recycling Public Information and Education) Program. In addition, the Southwest Washington Health District implemented household hazardous waste reduction education programs in 1989 with the adoption of the *Moderate Risk Hazardous Waste Management Plan for Clark and Skamania Counties*.

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Although the primary focus of many county and city solid waste management education programs during the first half of the 1990s was recycling education, waste prevention was still a component; especially when it came to residential yard debris management. In 1997, the County began to put a great deal of emphasis on using the results of the Waste Stream Analysis to determine target generators and waste streams for waste prevention education. Waste prevention programs and campaigns, conducted since the early '90s, that address residential waste include:

- Neighborhood chipping programs — Clark County, the cities of Ridgefield and Vancouver, and the town of Yacolt offer a yard debris chipper and crew to recognized neighborhood associations. Residents take the chipped material for use as mulch in their yards;
- Leaf collection programs are offered in the cities of Vancouver and Battle Ground, as well as in the unincorporated areas of the County as a method to promote the use of leaves as mulch;
- Live Christmas trees have been promoted as an alternative to cut trees;
- To reduce yard debris and food waste, the County and City of Vancouver have presented and sponsored backyard and worm composting workshops, backyard composting demonstration sites, grasscycling education, compost bin sales, composting displays and brochure

distribution, and composting presentations by the Clark County Master Composter/Recycler Program;

- County and City solid waste programs have given waste prevention and recycling presentations to community groups and schools;
- *A-Way With Waste* teachers' training workshops were sponsored by the Environmental Information Center and funded in part by Clark County;
- "It's Your Turn to Reduce Waste" display was developed for the 1997 Clark County Fair and other community events. The display showed ways to prevent waste by using safer household cleaners, such as baking soda; reducing packaging, by buying items in bulk; reusing single-sided paper; and stopping junk mail;
- Neighborhood Recycling Contests were introduced;
- A "waste free" breakfast was given for 250 community volunteers at *Earth Action Day '97*;
- Green cleaning recipe cards and cleaning kits, containing baking soda, salt and vinegar to replace more hazardous household cleaners, were distributed;
- Consumers were educated on how to read household product labels, purchase the least toxic product and only buy what they need;
- Residents were encouraged to donate reusable items. Many charitable organizations, churches, schools and other non-profit organizations accept used furniture, clothes, appliances, toys and housewares for repair and reuse. In addition, some Vancouver Neighborhood Associations conduct a "Pick Week" during Spring Cleanup, in which residents are encouraged to set reusable items out at the curb for others to take for free.
- A latex paint swap is conducted along with household hazardous waste collection events. In 1999, the County and Portland Metro signed an agreement to have Metro process all latex paint received in Clark County in Metro's new latex paint recycling facility. The recycled paint is tinted to create eight exterior paint colors and one interior shade of white. A portion of the recycled paint will be made available for distribution to government and non-profit agencies and to low-income housing programs in Clark County. The recycling costs significantly less than household hazardous waste disposal.

Despite all these valuable and popular programs, significant opportunities still exist for residential waste prevention. The 1995-96 Waste Stream Analysis found that reusable materials accounted for 2½ % of the waste stream. The study also found that recyclables in the waste stream represented a total gross economic loss ranging from \$13.8 million to \$18.5 million. In 2000, approximately 10,000 tons of material were pulled from the transfer station tip floor for recovery. This material was mostly cardboard, wood, yard debris, rubble and metals.

(Note: General solid waste education and promotion programs are discussed in detail in the Education and Promotion Chapter; moderate risk waste prevention activities are discussed in detail in the Moderate Risk Waste Plan Chapter.)

Commercial/Institutional Waste Prevention

According to the waste stream analysis conducted in 1999, approximately 47% of all disposed waste in the County came from non-residential generators. Non-residential waste is categorized as all waste not generated by single- and multi-family dwellings and industrial generators. (Industrially generated waste is not included in Washington State's definition of municipal solid waste.) The waste stream analysis shows that recyclable paper, construction/demolition and wood wastes, food wastes, metals and yard and garden wastes (in descending order) are components of this waste stream that present additional opportunities for waste prevention.

Commercial waste prevention is occurring and is a healthy business practice, whether or not the County and cities promote it or are able to measure it. Businesses often try to find ways to buy less and reduce disposal costs, provided it doesn't have a negative impact on the bottom line. Examples of commercial/institutional waste prevention activities that have been implemented in the county are as follows:

- Many retail outlets offer a rebate for returning grocery bags for self-reuse, and several stores sell reusable canvas shopping bags. Large retail chains have usually started these programs in response to a national corporate policy and renewed attention to environmental issues;
- Several businesses continue to provide waste prevention and reuse services. These include cloth diaper services, wood pallet remanufacturers, appliance stores that recondition white goods, such as refrigerators and stoves, and car dealers and wrecking yards that sell used automobiles and parts;
- Local branches of national companies are benefiting from corporate waste prevention practices. Soft drink distributors have converted to reusable plastic pallets for in-house use. Retail stores, such as Target, have eliminated unnecessary packaging on clothing items, saving not only on disposal costs, but also on the labor costs for unwrapping and displaying goods;
- Other businesses have been able to implement waste prevention practices with the assistance of County solid waste staff through the BRAG Program (Business Recycling Awards Group) or hazardous waste technical assistance programs. An example of a Clark County waste prevention success story is Columbia Machine. By replacing solvent-based paints with water-based paints, the company eliminated the need for solvents to clean up. Reducing the toxicity of paint used on parts allowed Columbia Machine to change its status from a regulated hazardous waste generator to a conditionally-exempt small quantity generator while cutting disposal costs;
- IMEX, the industrial waste exchange operated by the King County Local Hazardous Waste Management Program, offers a list of waste exchange opportunities in Clark County/Portland metropolitan area in its bi-monthly *Materials Listing Catalog*. This geographical area represents 10% -12% of IMEX's listings on average. Several Clark County businesses have had successful materials exchanges, thanks to IMEX. The Pacific Materials Exchange, a private, non-profit waste exchange, based in Spokane, also advertises waste exchange opportunities in the area;

- It is now standard practice for golf courses in the County to grasscycle (leave grass clippings on turf in order to cycle nitrogen back into the grass). One local golf course has gone so far as to institute a number of other environmentally-friendly practices, including reducing pesticides and fertilizers, in order to achieve full environmental certification in Audubon International's Cooperative Sanctuary Program. Some landscape maintenance services in the County even offer a financial incentive to residential and commercial clients, who allow the service to leave grass clippings on the lawn.

In addition to the above activities, Clark County government and other local agencies have conducted in-house waste prevention programs including:

- The *Incredible Shrinking Can* program was started in 1995. Conventional wastebaskets were replaced with 1-gallon mini-trash cans and a mixed paper recycling box in all County, City of Vancouver, Clark College and Southwest Washington Health District offices. Worm bins outside the Public Works Administration building and at the Southwest Washington Health District provided an incentive for employees to compost fruit and vegetable waste;
- Recyclable paper is a major component of the commercial/institutional waste stream. Many institutions, including Clark County and the City of Vancouver, have implemented paper waste prevention programs that encourage double-sided copying and reusing single-sided copies in draft printers and FAX machines;
- It was recommended that County purchasing should work towards the adoption of procurement standards that promote waste prevention practices;
- The County Public Works offices reuse single-sided printed paper in draft printers and FAX machines;
- The County became a Charter Government Member in EPA's WasteWi\$e program;
- Signs were posted at all copiers promoting the use of double-sided copies;
- Electronic e-mail is used to correspond internally and externally. Electronic newsletters are preferred over paper copies. Job announcements and departmental newsletters are distributed electronically;
- Pruned material from County parks and facilities is ground up and used on-site as mulch to help retain soil moisture and reduce weeds.

The County has also worked with institutions to encourage waste prevention. Activities include the following:

- School districts are assisted in decentralizing garbage bills, making each school responsible for its own waste disposal costs. This provides an economic incentive to practice waste prevention;
- Waste audits have been done at Clark College;

- Washington State University administrators were assisted, during the planning phases of the Vancouver campus, to ensure that waste prevention and recycling were incorporated into campus operations;
- Pilot vermicomposting projects were conducted at a number of schools, using worm bins;
- School districts were encouraged to switch to reusable/washable milk bottles;
- Support and funding was provided for the Environmental Information Center (EIC) and its *A-Way with Waste* teacher training workshop program. *A-Way With Waste* is an interdisciplinary curriculum that gives educators the tools to integrate waste prevention, recycling and vermicomposting into math, science, reading and language arts, social studies, economics, fine arts and other subject areas. The EIC also presents and develops other curricula that address waste prevention issues;
- Classroom presentations, service learning projects and school environmental fairs have been introduced to further promote waste prevention activities. Staff has also worked with instructors at Clark College and Washington State University Vancouver to help integrate waste prevention concepts into different business, industrial, biology, natural resource management and economics classes;
- Funding and support was provided for the Master Composter/Recycler “Worms Go To School” program. Through the program, teachers attend vermicomposting workshops and receive classroom worm bins and vermicomposting curricula. Program volunteers also do presentations and place worm bins in classrooms.

Needs and Opportunities

The design, manufacture, purchase or use of products and materials in a way that significantly reduces or eliminates the amount of waste and recyclable material in the waste stream is the most important option for cutting the growing volume of solid waste in Clark County. As a “front end” solution, waste prevention is the simplest, most direct form of waste diversion. Generally speaking, it is a cost-saving, resource-conserving, environmentally sound alternative to traditional forms of solid waste management; it reduces the need for collection, processing, marketing or disposal, as well as the capital, equipment and labor involved in those activities.

Waste Prevention Messages

Waste prevention messages need to encourage residents, businesses and institutions to:

- reduce product volume, weight, or both;
- increase product and material life through repair, remanufacture and reuse; make more efficient use of products and resources; and use products that are more durable;
- reduce or eliminate product packaging and choose reusable packing/shipping materials;
- decrease product consumption;

- find reuse opportunities for items, including salvage of building materials;
- use alternative products that generate less waste, such as cloth diapers and durable, reusable shopping bags;
- reduce the amounts of lawn and garden debris generated;
- recognize the personal, economic and time savings that various waste prevention activities create;
- reduce the toxicity of products that are used.

Ongoing Education Programs

The main discovery of recent waste prevention research is that waste prevention programs are most effective when an outside motivator, such as cost, is combined with well-funded, intensive education. Successes in waste prevention in other jurisdictions prove that a significant opportunity for waste prevention still exists in Clark County. We can also contribute to the growing national discussion on the effectiveness of waste prevention programs. To take advantage of opportunities, the County and cities need to use the outside motivators together with a well-funded and thoughtfully designed education campaign.

Education programs also need to be directed at target audiences that are based on either generator categories, subcategories or the type of waste stream. For example, messages could be directed at:

- Homeowners;
- Parents;
- 25-45 year-olds;
- Youth;
- Area visitors, via hotels and motels;
- Specific neighborhood associations and former Recycling Contest award recipients;
- Socioeconomic or cultural groups;
- Self-haulers;
- Specific industry categories;
- Office environments;
- Members of construction and other trades.

By isolating specific groups, resources can be focused on those who will get the most benefit from a specific type of message and may make it easier to conduct detailed waste and behavior surveys later.

The County and cities need to continue to support and fund programs, such as the Master Composter/Recycler program and the Environmental Information Center, which provide a number of opportunities to educate students, educators and the community about waste prevention. The need may also exist for the County and cities to find and support non-governmental agencies willing to take the lead in business waste

prevention assistance. Businesses may be more responsive to solid and hazardous waste management information and assistance delivered by a non-governmental agency, dedicated to business assistance and economic development, such as the Columbia River Economic Development Council.

Programs also need to be coordinated with other local, regional and state campaigns in order to ensure uniform messages and maximized resources. The Portland Metro area, Seattle-King County area and State of Washington all provide opportunities for the County and cities to partner on waste prevention campaigns.

Waste Exchanges and Reuse Programs

Although the IMEX waste exchange, based in King County, lists waste exchange opportunities in Clark County, the listings are limited (currently about 10-11% of total listings). Based on models nationwide, there is an adequate number of businesses, industries and manufacturers in the County to support the development of a Clark County/Portland-metropolitan area regional materials exchange. In the past, regional governments have been unwilling to assume the capital and personnel costs, associated with establishing and maintaining a local materials exchange. The Internet now would allow such an exchange listing to be more easily maintained locally. A Web exchange site is a waste prevention measure that can be updated frequently, avoiding the expense of a printed catalog. The site could list items of interest to both residential and commercial/institutional users. Surveys recently conducted by Portland Metro found that approximately one-half of homeowners and business owners/operators would definitely or probably access such information through the Internet. An alternative is to work with IMEX and King County to post increased listings from the Southwest Washington/Portland region.

In addition to creating a reuse program for household goods, clothing and food, there is a need to establish a reuse program for household hazardous waste. Many products, including paint, household cleaners, wood finishes and fertilizer, that are left at the household hazardous waste collection facilities are still usable. Products are often new and barely used. Such products could be made available at the household hazardous waste collection facilities or at some other distribution point, free-of-charge to the public. Or they could be distributed to non-profit, educational and government organizations, as is done in Metro's "Pass It On" program. Information regarding proper use would be distributed along with the products.

Economic Incentives

All residential waste collection rates in the County, regardless of whether they are set by cities or the WUTC, provide some financial incentive to reduce waste - the more waste that is disposed, the higher the cost to the waste producer. In 2000, the cities of Vancouver and Washougal have the greatest variable rate differential in Clark County - the cost difference between one and two 32-gallon cans is \$11.27. The City of Vancouver has a linear rate structure in which the cost of two cans is twice the cost of one, etc. Camas charges an additional \$4.70 for a second can. In unincorporated areas of the County, where rates are set by the WUTC, additional cans cost between \$4.00 and \$6.00 each. Although rates set by the WUTC include a mini-can option, monthly savings for residents who choose the mini-can are currently only \$1.96.

In order for waste prevention to succeed, there must be a significant difference between the rates. Garbage rates could be based on can weight, rather than on volume, otherwise residents are being rewarded for waste compaction, rather than prevention. One caveat to this concept is that charging by the pound may favor those who dispose a lot of plastic and polystyrene foam. If rates are based on can volume, then collection services need to offer a very small can rate - 10 gallons per week as is done in Olympia, WA - and rates need to be linear. The rate for a 90-gallon can should be nine times that of the 10-gallon can rate.

The objective is to educate people to consume less and reuse. To encourage true waste prevention, variable rates could apply to recyclables and yard debris as well. However, there is some danger that the public may resist this idea, because recycling has become the preferred environmental action for a large portion of the population. One way of overcoming resistance would be to reinforce the message that waste prevention is less expensive than recycling and is sometimes free.

Program Evaluation

It is vital to monitor the effectiveness of the County's and cities' waste prevention efforts. Monitoring of waste prevention is needed to determine whether the waste prevention goals are being met, to provide the needed feedback to improve program effectiveness, and to assist decision makers in allocating resources among various waste management efforts.

Monitoring waste prevention is more difficult than monitoring recycling or composting, because reduction results in the elimination of materials that, once reduced, cannot be measured directly. However, there are methods of charting progress toward the County's waste diversion goals and attributing diversion to some waste prevention activities. The County and cities also can monitor changes in the waste prevention awareness and actions of residents and businesses. Reduction of toxicity by eliminating the use of toxic products or switching to less toxic products also may be calculable. Opportunities for monitoring waste prevention are discussed at greater length in the Waste Monitoring and Measurement Chapter.

Alternatives

The Solid Waste Advisory Commission reviewed the following Alternatives:

- 1. Expand and augment County's and cities' waste reduction and recycling education and promotion programs for residential, institutional and commercial generators of waste.*
- 2. Support legislation and efforts to encourage the WUTC to allow counties to provide stronger rate incentives to the generator for waste reduction.*
- 3. Develop and adopt County and city procurement standards that encourage waste prevention.*

4. *Continue and expand yard debris reduction programs such as “grasscycling”, xeriscaping and home composting.*
5. *SWAC and the County and cities should take an active role in trying to prevent new types of wastes from entering the waste stream by leading the charge against products which create more waste and less recycling.*
6. *Lobby State and Federal governments to pass legislation that requires waste prevention.*
7. *Promote existing waste exchange and reuse programs.*
8. *Implement additional in-house waste prevention programs and practices.*
9. *Expand existing public recognition programs and awards, and develop new ones.*
10. *Change the 1994 Plan waste prevention goal to a more measurable, outcome-based goal.*
11. *Support market development efforts for wood waste, electronics and other materials in an effort to find alternatives to disposal.*
12. *Utilize partnerships with other regulatory agencies and or representatives of the business community to increase the visibility and accessibility of commercial assistance programs.*

Evaluation of Alternatives

1. *Expand and augment County’s and cities’ waste reduction and recycling education and promotion programs for residential, institutional and commercial generators of waste.*

Waste prevention education is a required element of the plan. Waste prevention education can have three goals: to motivate, to educate about a program, and to educate about a product. Education can be impersonal, such as public service announcements, or personal, such as workshops. Specific residential waste prevention education tools include: brochures, home waste audit forms, newspaper,

Radio and television advertisements, posters, billboards, transit signs, shelf talkers, static displays, contests, workshops, group presentations, and personal visits. For an educational program to be successful, it must survive over time and be reinforced educators and the community about waste prevention by delivery through several media, such as television, print and radio.

Waste prevention curricula are another valuable way of impressing conservation upon the youngest generation of consumers and generators of waste. Teacher training workshops, such as the *A-Way With Waste* training workshop, classroom presentations, school waste prevention contests, service learning projects and school environmental fairs are all ways in which the county delivers waste prevention education to students.

The County and cities can continue to work with students, teachers, schools and school districts to implement waste prevention curricula.

The County and cities can accomplish this, in part, by continuing to utilize programs such as the Master Composter/Recycler program and the Environmental Information Center which provide many opportunities to educate students,

To assist commercial/institutional generators with waste prevention, the County and cities may:

- Conduct general education, as discussed for residential generators above;
- Conduct waste audits or evaluations to motivate and educate businesses. The County and cities may choose to partner with non-governmental agencies, willing to assume the lead, by providing funding for business waste prevention assistance;
- Distribute fact sheets or brochures about waste prevention and safer chemical/product substitutes;
- Develop a business assistance center to serve as a clearinghouse for environmental “better management” practices;
- Increase the use of Internet-based communication medium, such as Web sites;
- Provide recognition through programs, such as BRAG (Business Recycling Awards Group), for businesses that prevent waste;
- Include businesses in the *Clark County Recycling Directory*, if they provide waste prevention services to residents, such as repair and rental;
- Offer waste prevention workshops;
- Sponsor demonstration projects, such as integrated pest management for ground maintenance.

Additionally, the County and cities could mandate that all, or specific categories of, non-residential generators prepare and implement plans to reduce and recycle wastes at their operations. The County and cities could provide a specific waste prevention planning form and technical assistance in completing the form. Waste prevention plans can be a valuable source of reporting and monitoring information. The plans themselves can be structured to assist business and operations managers in identifying opportunities for waste diversion.

To maximize resources and reinforce messages, waste prevention campaigns should be coordinated with other local, regional and state programs and be directed at specific target audiences. Campaigns should incorporate a message about the economic benefits, as well as the benefits of waste prevention to environmental and social sustainability and stewardship.

2. Support legislation and efforts to encourage the WUTC to allow counties to provide stronger rate incentives to the generator for waste prevention.

Generator-pay systems for waste collection provide financial incentives to prevent waste. With a generator-pay system, residents, businesses and institutions pay according to how much waste they have picked up by their garbage hauler.

Numerous types of generator-pay systems exist, including:

- Variable rate systems, in which generators pay less if they set out smaller or fewer garbage containers;
- Bag and tag systems, in which waste is collected only in special bags or tagged containers. Traditionally, residents buy bags and tags from retailers at set prices;
- Limits on the number of garbage containers that are serviced;
- Options for biweekly, monthly or on-call service;
- Weight-based rate systems, in which garbage containers are weighed as they are collected by semi-automated or automated trucks;
- Charges to residents for household hazardous waste disposal.

Generator pay systems can provide a powerful incentive to reduce and recycle wastes. They also increase awareness of the solid waste problem and can provide a fair fee structure. Therefore, it is desirable to strengthen the existing rate incentives in Clark County to put them on par with the City of Vancouver's linear-rate system. The County, cities, collectors and WUTC may evaluate stronger incentives, including exponential rates. Rate setters may also experiment with options that increase program flexibility, while providing additional incentives, such as 10-gallon super mini-cans and biweekly, monthly and on-call collection.

Rates set with a strict cost-of-service method can be replaced with rates that provide significant incentives for generators who demonstrate outstanding success in minimizing waste generation, while providing penalties for heavy generators. One measurement of waste prevention can be obtained by tracking the number of customers who reduce their level of service. Rate-setting authorities should experiment with aggressive manipulation of service-level and rate incentives, including linear and exponential. The possibility of establishing a reserve fund to maintain an incentive program should be investigated. If established, this fund could be used by the County or cities to stabilize the revenue stream when customers change levels of service.

Although the County does not currently have direct authority for setting rates, it should continue to encourage the WUTC to provide stronger incentives and authorize even more experimentation. The County should also seek additional authority to set rates.

Other areas where the County may want to become involved include: providing assistance to cities and private solid waste service providers, promoting changes in rate structures to the public, and monitoring the waste prevention impact of future rate changes.

3. Develop and adopt County and city procurement standards that encourage waste prevention.

Clark County, the cities and other large agencies, such as the Port of Vancouver and the school districts, all have a significant impact on the local marketplace. By setting policies and writing new product specifications for goods that favor durability, reusability, reduced packaging or lower toxicity, the public sector can use its spending power to reduce the generation and disposal of waste and set an example for the community. Such policies could also require potential vendors to provide confirmed environmental product claims. Formal County and city procurement policies could create market demand for waste prevention activities and set a positive example for local governments, businesses and institutions. Products to be targeted could include:

- Goods that allow for greater waste prevention, such as double-sided xerographic machines and compact replacement bulbs;
- Goods that require replacement or repair less often or make repairs less frequent, such as synthetic lubricating oil or durable furniture;
- Goods that are easily repaired, such as machinery with standardized, replaceable parts;
- Goods that can be reused, such as washable dishes, utensils, glasses and coffee cups;
- Goods that can be reused or remanufactured, such as printer cartridges and computer disks;
- Networked computer work stations that allow electronic distribution of memos, correspondence, job announcements, etc.;
- Electronic document storage to reduce the need for paper file copies of documents;
- Goods made completely or partially from recycled materials, including plastic trash can liners, curbside recycling containers, utility drums, high-grade xerographic paper and stationary, business cards, envelopes, tissue products, such as toilet paper, carpet padding, composition board, gutter guards, reclaimed paint, plastic toilet partitions, composite or plastic landscaping lumber, plastic nursery pots, compost, sign blanks, signposts, plastic or rubber speed bumps and traffic delineators, reclaimed antifreeze, marine fenders, latex paint and re-refined lubricating oil. Although buying recycled products is not literally waste prevention, it does support markets for recycled products.

4. Continue and expand yard debris reduction programs such as “grasscycling”, xeriscaping and home composting.

Five distinct activities that can reduce the need to collect yard debris for composting or disposal are:

- Grasscycling - the practice of leaving grass clippings on the lawn after mowing;
- Backyard composting of leaves, grass, and garden debris and some food wastes, if conducted properly;
- On-site chipping of prunings into mulch;

Xeriscaping - the planting of landscapes that require less water, the selection of landscapes that produce less yard debris, and the selection of appropriate plant material for the area;

- The selective application of slow-releasing organic fertilizers to reduce unwanted surges of lawn growth.

Grasscycling and backyard composting have the greatest short-term potential for reducing yard debris. Grasscycling targets only one type of yard debris — grass — but is easier for residents and grounds maintenance staff than backyard composting. Active promotion of grasscycling can divert a significant amount of yard waste from the waste stream and help prevent odor problems at large-scale commercial composting operations.

The County and cities can also continue to provide technical assistance to residents, institutions and businesses. They may continue to sponsor composting bin and mulching mower sale events or rebate coupons. Backyard composting and grass cycling can be promoted through a variety of media, including the Master Composter/Recycler program, composting demonstration sites and the Natural Lawn Care program.

Providing compost bins to residents may increase participation in backyard composting, just as providing recycling containers has proved to increase participation in curbside recycling. The Master Composter/Recycler program has supported and assisted with an annual bin sale for the last few years. The program also offers bins for sale at a subsidized rate year round.

The County and cities may also continue to offer the opportunity to mulch wood debris for ground cover. Wood waste may also be ground and composted. Residents then take their own mulch home for use as a soil amendment or ground cover. Neighborhood chipping programs also promote waste prevention through equipment sharing. Neighbors don't have to purchase or rent their own equipment.

5. SWAC should take an active role in trying to prevent new types of wastes from entering the waste stream by leading the charge against products, which create, more waste and less recycling.

The County SWAC should communicate the need to reduce toxicity, packaging and resource waste in consumer products to packaging and product manufacturers and trade associations. SWAC could also push the movement to have industries and associations be accountable for any failure to react responsibly to the solid waste they produce.

The County and cities should work with the State, retail associations and manufacturers to encourage the use of reusable packaging and manufacture of repairable products; to institute take-back programs that get products back to manufacturer; to set fees (such as advanced disposal fees, deposits, litter fees) on special wastes which could help fund disposal/recovery programs. The County and cities can also work with the Washington Retailers' Association (WRA) and local retailers and product and package manufacturers to help retailers meet and exceed the WRA Preferred Packaging Procurement Guidelines.

6. Lobby State and federal governments to pass legislation that requires waste prevention.

Such legislation could address the following topics:

- Container, product or packaging deposit legislation;
- Tax incentives;
- Product or packaging prohibitions;
- Warranties on durable goods;
- Product labeling for reduction, reuse, recycled content and recyclability;
- Standardized packaging;
- Product use and reuse standards;
- The proposed statewide ban on landfilling of yard debris or other materials;
- Funding for waste prevention efforts;
- WUTC rate-setting policy and variable can rates;
- Extended producer responsibility;
- The manufacture of products that run contrary to the goals of waste prevention;
- Proposed packaging reduction, recycling and recycled content goals, similar to the WRA goals, the National Task Force on Packaging goals or current Oregon and California legislation.

7. Promote existing waste exchange and reuse programs.

One company's disposal problem may be another's valuable resources. A waste exchange acts as a liaison between potential users of waste products and their generators. A waste exchange can be a database of current potential buyers and sellers or an actual warehouse, where products are stored. The Clark County/Portland Metro area could develop a waste exchange similar to the two existing regional waste exchanges: Industrial Materials Exchange (IMEX), the regional waste exchange managed by King County Local Hazardous Waste Management Program, and the Pacific Materials Exchange, a private waste exchange based in Spokane.

A hazardous household product exchange or reuse program is another alternative that can divert items from the waste stream. Many of the products, such as paint, household cleaners, wood finishes and fertilizer, that are dropped off at the household hazardous waste collection facilities are still usable. Products are often new and barely used. Such products could be made available, either at the household hazardous waste collection facilities or at some other distribution point, free-of-charge to the public. Or they could be distributed to non-profit, educational and government entities, as is done in Metro's "Pass It On" program.

"Used, But Not Used Up" or "Choose to Reuse" type campaigns can encourage residents to repair or give away items that are still usable. By encouraging residents to purchase used items and clothing, waste prevention is also reinforced. The *Recycling Directory*, which has been expanded to include a special section devoted to thrift stores, charities, small and large appliance repair shops and other outlets for reuse, is one method of promotion.

The County and cities could conduct special collection events outside the urban growth area; encourage neighborhood associations to conduct “pick” events, such as “Pick Week,” in which residents set reusable items at the curb — free for the taking — possibly in conjunction with Spring Cleanup; encourage residents and businesses to fix, sell or donate items that might otherwise be thrown away; work with Goodwill or other non-profit thrifts to locate a reusable collection trailer at the transfer stations; or work with Columbia Resource Company to pull items from the tipping floor that may be reused. Another component of this program could be to encourage and assist with food redistribution programs on a commercial/institutional level and in residential “garden share” type programs.

8. Implement additional in-house waste prevention programs and practices.

The County and cities can continue current in-house waste prevention programs and implement new activities for all or a limited number of County and city facilities. Opportunities to reduce waste in-house include: promoting the more efficient use of paper; promoting the use of alternative safer building and grounds maintenance products; incorporating integrated pest management to reduce the use of chemical pesticides in landscape maintenance; reducing the amount of yard debris; practicing grasscycling; using electronic communications instead of paper; redesigning bills and mailing envelopes to minimize paper use; promoting and maintaining up-to-date Web pages, rather than distributing brochures and flyers; reducing unsolicited mailings; and replacing selected disposable products with reusable products.

By carefully monitoring the waste prevention program’s effectiveness, along with its costs, avoided costs and benefits; local jurisdictions can develop a model for local businesses, schools and other government facilities. A successful in-house program is likely to save money through more efficient purchasing practices and avoided disposal costs.

9. Expand existing public recognition programs and awards and develop new ones.

Awards and public recognition can be used to increase motivation to reduce waste at the source. Awards honor individuals, neighborhoods, organizations, institutions and businesses that have contributed significantly to waste prevention in Clark County, through leadership, innovation, volunteerism or by simply setting a positive example for others. Public recognition through programs, such as BRAG (Business Recycling Awards Group) and Business Partners for Clean Water, provide an opportunity for the County and cities to publicize innovative waste prevention and recycling programs and encourage the non-residential sector to participate in waste prevention activities. Neighborhood recycling contests have focused on getting residents to increase recycling. Similar contests could be held to see which neighborhood could show the greatest reduction in waste or provide the most donations for charity. Another idea is to have a reuse contest, getting neighborhoods to be creative and come up with unique or utilitarian reuse ideas for items that would otherwise end up in the waste stream.

10. Change the 1994 Plan waste prevention goal to a more measurable, outcome-based goal.

Ecology’s planning guidelines require that the plan set specific waste prevention goals. For goals to be meaningful, they must be measurable. The waste reduction goals established in the 1994 Solid Waste Management Plan are difficult to measure. Instead, the County and cities can adopt outcome-based goals, such as:

“To raise awareness of waste prevention and increase participation in waste prevention activities (including reducing the total volume and toxicity of material generated for disposal and recycling) among county residents, businesses and institutions.”

The County and cities can review this goal and revise it, if appropriate, at the next Plan update. Perhaps by then, a national standard for measuring waste prevention will exist. The County and cities may also set program-specific goals for selected source reduction alternatives, such as rates for participation in yard debris reduction, household hazardous waste collection and waste diversion goals for handling facilities.

The County and cities may choose to monitor their waste prevention programs to assess the public's waste prevention needs, assure that programs are cost-effective and identify opportunities to improve program quality. The County's monitoring program should include a longitudinal survey of residential and non-residential waste prevention attitudes and practices.

The County and cities may annually review their progress in meeting waste prevention goals, needs and opportunities. Based on the survey of public needs, attitudes and practices, staff can establish internal awareness and participation goals for specific waste prevention activities.

11. Support market development efforts for wood waste, electronics and other materials in an effort to find alternatives to disposal.

Market development activities support new local or regional processing and re-manufacturing capacity and conserve resources as well as create jobs and divert waste from the landfill. Market development is critical to the long term cost-effectiveness and evolution of recycling. New processes and facilities for new materials increase the types of materials that Clark County residents and businesses can recycle. Until now, the County has played a relatively minor role in market development. Because of the increased number and tonnage of certain types of materials heading to the landfill, the County should support local and regional efforts to site and/or develop new processors of certain materials, especially wood waste and electronics.

12. Utilize partnerships with other regulatory agencies and/or representatives of the business community to increase the visibility and accessibility of commercial technical assistance programs.

The County should work with other agencies and/or businesses to improve coordination with other agencies through information sharing, resource sharing and enhancing programs and outreach. Members of the business community would be able to suggest ideas for program improvement and usefulness to other businesses.

Recommendations

The Solid Waste Advisory Commission reviewed the complete list of Alternatives and has recommended the following Alternatives:

1. Expand and augment County's and cities' waste reduction and recycling education and promotion programs for residential, institutional and commercial generators of waste.

- 2. Support legislation and efforts to encourage the WUTC to allow counties to provide stronger rate incentives to the generator for waste reduction.*
- 3. Develop and adopt County and city procurement standards that encourage waste prevention.*
- 4. Continue and expand yard debris reduction programs such as “grasscycling”, xeriscaping and home composting.*
- 5. SWAC and the County and cities should take an active role in trying to prevent new types of wastes from entering the waste stream by leading the charge against products which create more waste and less recycling.*
- 6. Lobby State and federal governments to pass legislation that requires waste prevention.*
- 7. Promote existing waste exchange and reuse programs.*
- 8. Implement additional in-house waste prevention programs and practices.*
- 9. Expand existing public recognition programs and awards, and develop new ones.*
- 10. Change the 1994 Plan waste prevention goal to a more measurable, outcome-based goal.*
- 11. Support market development efforts for wood waste, electronics and other materials in an effort to find alternatives to disposal.*
- 12. Utilize partnerships with other regulatory agencies and or representatives of the business community to increase the visibility and accessibility of commercial assistance programs.*